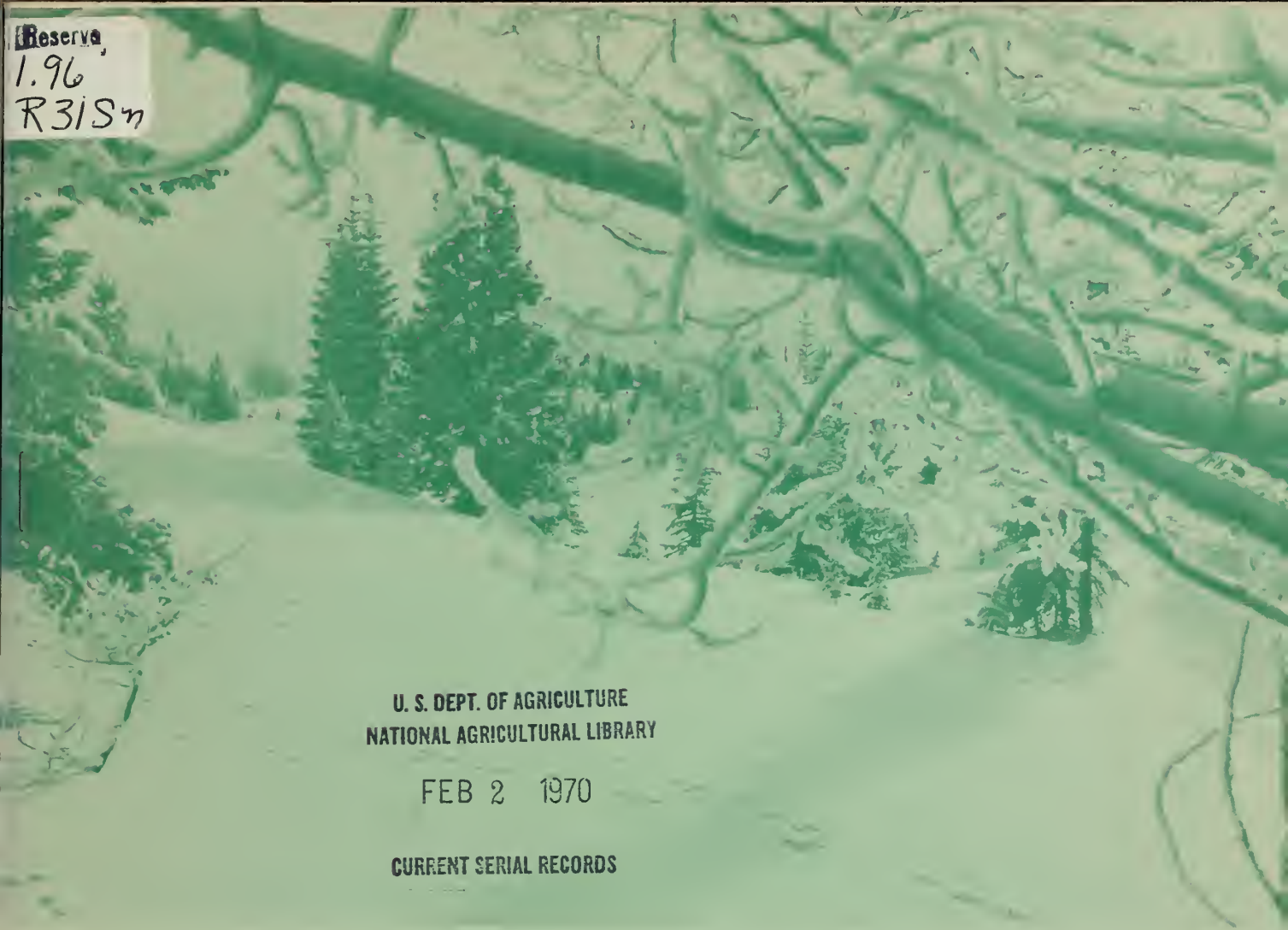


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CURRENT SERIAL RECORDS

WATER SUPPLY OUTLOOK FOR ARIZONA

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE,
SALT RIVER VALLEY WATER USERS ASSOCIATION
and
ARIZONA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies
named above in cooperation with the Federal, State and pri-
vate organizations listed on the last page of this report.

AS OF
JAN. 15, 1970

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1400 snow courses in Western United States and in the Columbia Basin in British Columbia. In the near future, it is anticipated that automatic snow water equivalent sensing devices along with radio telemetry will provide a continuous record of snow water equivalent at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

| STATE | ADDRESS |
|--------------------|---|
| Alaska | P. O. Box "F", Palmer, Alaska 99645 |
| Arizona | 6029 Federal Building, Phoenix, Arizona 85025 |
| Colorado (N. Mex.) | 12417 Federal Building, Denver, Colorado 80202 |
| Idaho | Room 345, 304 N. 8th. St., Boise, Idaho 83702 |
| Montana | P. O. Box 98, Bozeman, Montana 59715 |
| Nevada | P. O. Box 4850, Reno Nevada 89505 |
| Oregon | 1218 S. W. Washington St., Portland, Oregon 97205 |
| Utah | 4012 Federal Building, Salt Lake City, Utah 84111 |
| Washington | 360 U.S. Court House, Spokane, Washington 99201 |
| Wyoming | P. O. Box 340, Casper, Wyoming 82601 |

PUBLISHED BY OTHER AGENCIES.

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P O Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK FOR ARIZONA

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

KENNETH E. GRANT
ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON, D.C.

|||||

Released by

M. D. BURDICK
STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
PHOENIX, ARIZONA

In Cooperation with

RICHARD K. FREVERT
DIRECTOR
ARIZONA AGRICULTURAL
EXPERIMENT STATION

VICTOR I. CORBELL
PRESIDENT
SALT RIVER VALLEY WATER
USERS ASSOCIATION

|||||

Report prepared by

RICHARD W. ENZ, Snow Survey Supervisor

SOIL CONSERVATION SERVICE
ROOM 6029 FEDERAL BUILDING
PHOENIX, ARIZONA 85025

INDEX to SNOW COURSES and SOIL MOISTURE STATIONS

| Number | Name | Sec | Twp | Rge | Elevation | River Basin |
|----------|----------------------------|-----|--------|-------|-----------|-----------------|
| 11R6 | Baker Butte (p) | 4 | 12N | 9E | 7300 | Verde |
| 9S1-A | Baldy (p) | 28 | 7N | 27E | 9125 | Little Colorado |
| 9S15 | Baldy #2 | 12 | 6N | 26E | 10000 | Little Colorado |
| 9S16 | Baldy #3 | 13 | 6N | 26E | 11000 | Little Colorado |
| 10T1 | Bear Wallow | 6 | 12S | 16E | 8100 | Gila |
| 12P5 | Bill Williams Intermediate | 17 | 21N | 2E | 8550 | Lower Colorado |
| 12P4 | Bill Williams Summit | 17 | 21N | 2E | 8950 | Lower Colorado |
| 9S6 | Beaver Head | 13 | 4N | 30E | 8000 | San Francisco |
| 9S10-* | Black River Divide | 10 | 6N | 27E | 9400 | Salt |
| 12N1 | Bright Angel | 34 | 33N | 3E | 8400 | Lower Colorado |
| 12R1 | Camp Wood | 3 | 16N | 6W | 5700 | Verde |
| 10R7-M | Canyon Creek #2 | 18 | 11N | 15E | 7500 | Little Colorado |
| 10R9 | Canyon Point (p) | 28 | 11N | 14E | 7600 | Salt |
| 11R2-M | Casner Park | 19 | 18N | 8E | 6930 | Verde |
| 12P1-M | Chalender | 27 | 22N | 3E | 7100 | Verde |
| 12R6 | Copper Basin Divide (p) | 23 | 13N | 3W | 6720 | Verde |
| 10R8-* | Corduroy Creek | 4 | 8N | 21E | 6000 | Salt |
| 9S7 | Coronado Trail | 26 | 5N | 30E | 8000 | San Francisco |
| 9T2-A | Crazy Horse | 34 | 8S | 24E | 10200 | Gila |
| 7T1 | Emory Pass #1 | 16 | 16S | 9W** | 7800 | Mimbres |
| 7T2 | Emory Pass #2 | 16 | 16S | 9W** | 7800 | Mimbres |
| 10R6 | Forest Dale | 2 | 9N | 21E | 6430 | Salt |
| 11P2 | Fort Valley (p) | 22 | 22N | 6E | 7350 | Little Colorado |
| 9R5 | Ft. Apache | 18 | 7N | 27E | 9160 | Little Colorado |
| 8S1-M | Frisco Divide | 31 | 6S | 20W** | 8000 | San Francisco |
| 12R4 | Gaddes Canyon | 11 | 15N | 2E | 7600 | Verde |
| 10R5 | Gentry | 36 | 11N | 15E | 7650 | Salt |
| 11P1 | Grand Canyon | 21 | 30N | 4E | 7500 | Lower Colorado |
| 9S11 | Hannagan Meadows (p) | 19 | 3N | 29E | 9090 | Salt |
| 11R5 | Happy Jack | 30 | 17N | 9E | 7630 | Verde |
| 9R10 | Hawley Lake | 13 | 7N | 24E | 8300 | Salt |
| 10R4 | Heber (p) | 28 | 11N | 15E | 7600 | Little Colorado |
| 9T1-A | High Peak | 34 | 8S | 24E | 10500 | Gila |
| 8S9-A | Hummingbird | 19 | 11S | 17W** | 10550 | San Francisco |
| 8S6 | Ice King | 6 | 11S | 18W** | 8020 | San Francisco |
| 7S2 | Inman | 6 | 11S | 10W** | 7800 | Gila |
| 11P9 | Inner Basin #1 (p) | 28 | 23N | 7E | 10000 | Little Colorado |
| 11P8 | Inner Basin #2 (p) | 28 | 23N | 7E | 9750 | Little Colorado |
| 11P7 | Inner Basin #3 | 3 | 23N | 7E | 10250 | Little Colorado |
| 12R2 | Iron Springs | 22 | 14N | 3W | 6200 | Bill Williams |
| 9S2-A | Maverick Fork (p) | 13 | 6N | 27E | 9150 | Salt |
| 7S3-A | McKnight Cabin | 10 | 15S | 10W** | 9300 | Mimbres |
| 9R2-M | McNary | 23 | 8N | 23E | 7200 | Salt |
| 9R1 | Milk Ranch | 33 | 8N | 23E | 7000 | Salt |
| 12R3 | Mingus Mountain | 3 | 15N | 2E | 7100 | Verde |
| 8S2 | Mogollon | 2 | 11S | 19W** | 7000 | San Francisco |
| 11R4 | Mormon Lake | 13 | 18N | 8E | 7350 | Little Colorado |
| 11R3-M-A | Mormon Mountain (p) | 14 | 18N | 8E | 7500 | Verde |
| 9S12-A | Mt. Ord | 4 | 6N | 26E | 11000 | Salt |
| 11R1-M | Munds Park | 15 | 18N | 7E | 6500 | Verde |
| 11P5-M | Newman Park | 25 | 19N | 6E | 6750 | Verde |
| 9S4 | Nitrioso | 23 | 6N | 30E | 8500 | San Francisco |
| 9S5 | Pacheta | 27 | 4-1/2N | 27E | 7800 | Salt |
| 8S7 | Redstone Trail | 5 | 11S | 18W** | 8600 | San Francisco |
| 10T2 | Rose Canyon | 15 | 12S | 16E | 7300 | Gila |
| 8S8 | Silver Creek Divide | 4 | 11S | 18W** | 9000 | San Francisco |
| 9S14-A | Smith Cienega | 10 | 6N | 26E | 9850 | Salt |
| 11P4 | Snow Bowl #1 (p) | 36 | 23N | 6E | 10260 | Verde |
| 11P6 | Snow Bowl #2 | 31 | 23N | 7E | 11000 | Verde |
| 9S8 | State Line | 6 | 6S | 21W** | 8000 | San Francisco |
| 12R5 | White Spar | 19 | 13N | 2W | 6000 | Verde |
| 12P2 | White Horse Lake Jct | 2 | 20N | 2E | 7150 | Verde |
| 8S10-A | Whitewater | 19 | 11S | 17W** | 10750 | Gila |
| 12P3 | Williams Ski Run | 9 | 21N | 2E | 7720 | Lower Colorado |
| 13P1 | Willow Ranch | 16 | 21N | 11W | 5000 | Bill Williams |
| 9R6 | Wilson Lake (p) | 4 | 7N | 26E | 9000 | Salt |
| 10S1 | Workman Creek | 33 | 6N | 14E | 6900 | Salt |

M SOIL MOISTURE STA.

(p) STORAGE GAGE

A

AERIAL SNOW DEPTH MARKER

* SOIL MOISTURE STA. ONLY

** NM PRINCIPAL MERIDIAN

ARIZONA WATER SUPPLY OUTLOOK

JANUARY 15, 1970

* * * * *
* The water supply outlook for Arizona is near normal. Al- *
* though seasonal runoff is anticipated to be only half of nor- *
* mal, this is offset by the large amount of water in storage. *
* * * * *

SNOW COVER

Below normal snow cover was measured on January 15 on all watersheds. Only one significant snowfall has occurred this winter on the Salt and Verde Watersheds. This December storm produced generally small amounts in all areas except along the Rim south of Heber, where a moderate amount was received. Since January 1, there have been only a few flurries, except in the Mogollon Mountains when a fair snowfall occurred. The present snow pack varies from 5 % of average on the Verde Watershed to 47 and 57% on the Salt and Gila Watersheds respectively.

PRECIPITATION

Mountain precipitation since November 1 has been below normal, ranging from 50 to 80% of average. So far in January, however, precipitation has been insignificant everywhere except in the Mogollon Mountains.

SOIL MOISTURE

As a result of good precipitation last fall, soil moisture is generally better than normal. This will result in efficient runoff if precipitation is good during the next three months.

RESERVOIR STORAGE

Above average water storage exists in all major reservoirs due to good carry-over from previous years. Salt River Project Reservoirs, at 66% of capacity, contain 36% above the average amount of storage for this date. San Carlos Reservoir, although containing over twice the normal amount of water, is only 23% of capacity. Storage in the Colorado River Reservoirs is 50% above the 1953-67 average, amounting to 1.85 million acre-feet more than last year at this time.

STREAMFLOW AND WATER SUPPLY

December streamflow was much below average, ranging from 30% of average on the Salt and Verde Rivers to 38% on the Gila. Some of this low flow was due to cold temperatures, but low precipitation is mainly responsible.

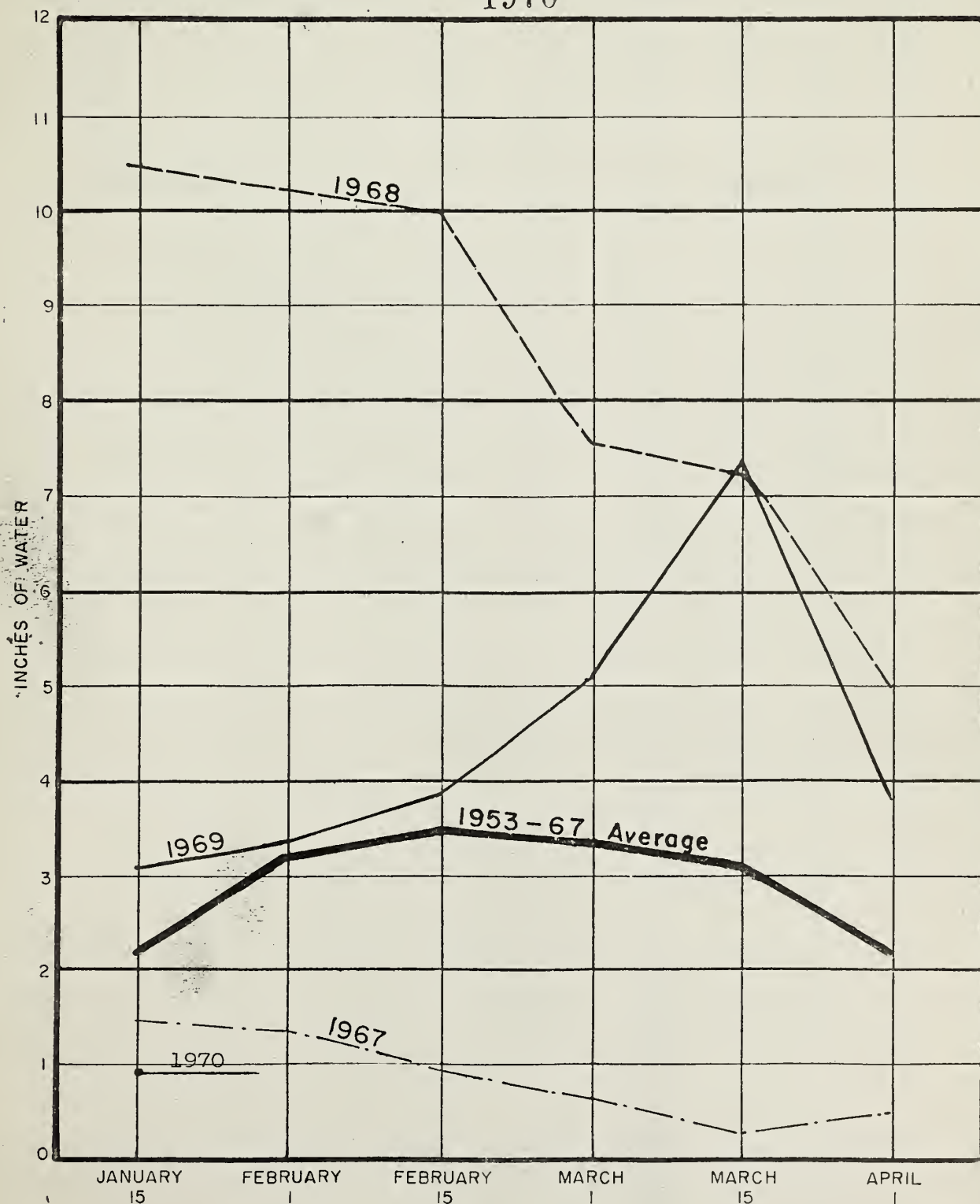
Preliminary streamflow forecasts indicate seasonal runoff is likely to be about half of average. With so little snow now on the ground, the actual runoff will depend almost entirely on subsequent precipitation.

Water supplies will be adequate on all projects served by stored water, since there is good carryover storage from previous years. Considerable pumping will be required along the Upper Gila River and on the San Carlos Project.

RESERVOIR STORAGE (Thousand Acre Feet) MID-MONTH READING ABOUT JANUARY 15, 1970

| Basin or Stream | RESERVOIR | Usable Capacity | Usable Storage | | |
|---|-------------------------------------|-----------------|----------------|-----------|----------|
| | | | This Year | Last Year | Average† |
| GILA RIVER DRAINAGE | | | | | |
| Agua Fria | Lake Pleasant | 157.6 | 71.5 | 104.8 | 40.1 |
| Granite | Watson Lake | 4.7 | 1.3 | 1.3 | --- |
| Granite | Willow Creek | 6.1 | 2.3 | 1.7 | --- |
| Gila | San Carlos | 984.9 | 197.8 | 466.4 | 89.4 |
| Verde (2) | Bartlett & Horseshoe | 317.7 | 84.7 | 85.9 | 93.4 |
| Salt (4) | Roosevelt, Apache, Canyon & Saguaro | 1755.0 | 1,284.3 | 1387.2 | 908.9 |
| COLORADO RIVER DRAINAGE | | | | | |
| Colorado | Lake Havasu | 619.4 | 549.0 | 547.6 | 534.8 |
| Colorado | Lake Mohave | 1810.0 | 1,524.8 | 1534.0 | 1652.3 |
| Colorado | Lake Mead | 26159.0 | 16,890.0 | 15337.0 | 16754.3 |
| Colorado | Lake Powell | 25002.0 | 9,415.0 | 9113.0 | --- |
| Little Colorado | Lyman | 30.6 | 18.5 | 19.0 | 8.7 |
| Little Colorado | Show Low Lake | 5.1 | 0.2 | 0.7 | 1.3* |
| * Average is for less than 15 years of record in the 1953-67 period | | | | | |
| - 2 - | | | | | |

RELATIVE SNOW WATER ACCUMULATION ARIZONA 1970



This graph represents the average snow water content on eleven selected snow courses on Arizona Sub-Watersheds.

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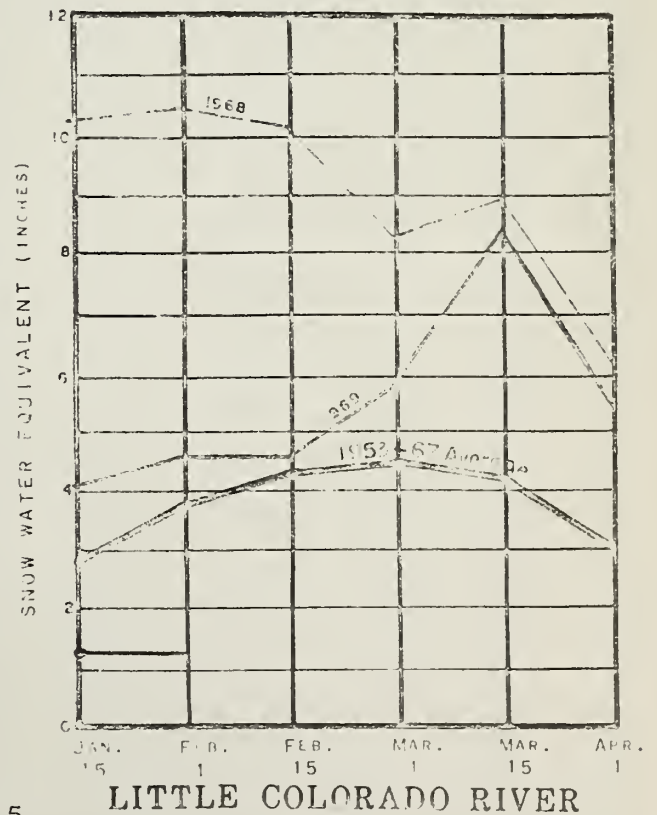
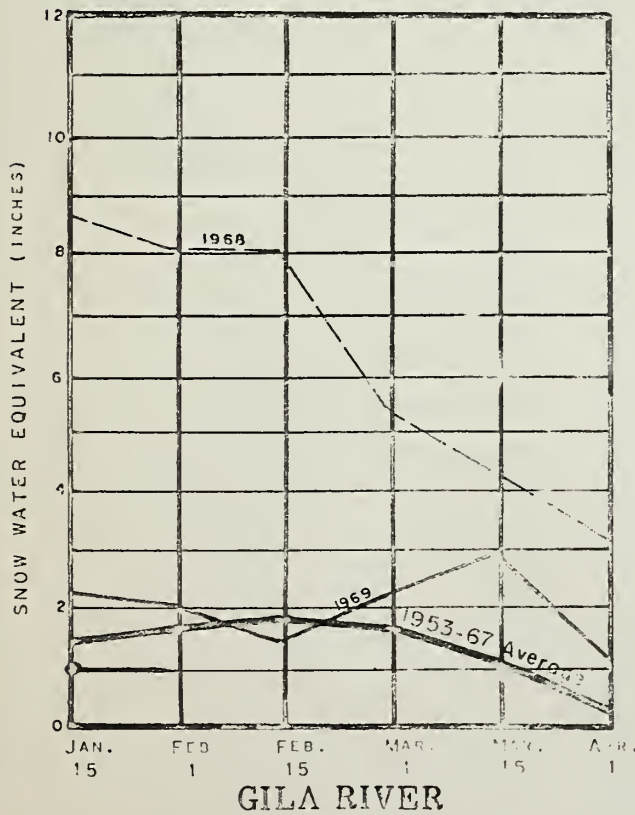
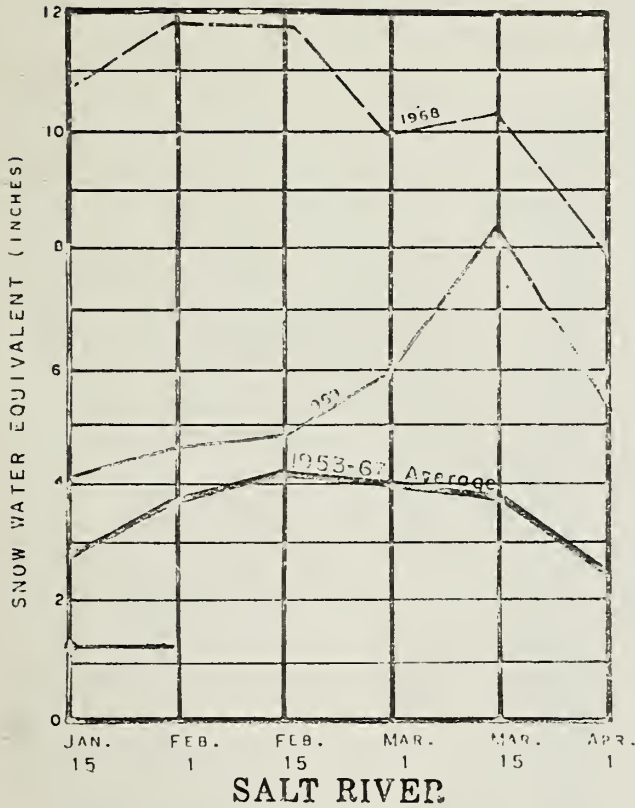


SUMMARY of SNOW MEASUREMENTS (COMPARISON WITH PREVIOUS YEARS)

JANUARY 15, 1970

| RIVER BASIN and/or SUB-WATERSHED | Number of Courses Averaged | THIS YEAR'S SNOW WATER AS PERCENT OF: | |
|----------------------------------|----------------------------------|---------------------------------------|---------|
| | | Last Year | Average |
| Gila | 6 | 41 | 56 |
| Salt | 9 | 32 | 47 |
| Verde | 7 | 3 | 5 |
| Little Colorado | 4 | 33 | 47 |
| - 4 - | | | |

1970 ARIZONA SNOW COVER BY WATERSHEDS



SNOW EARLY WINTER SURVEYS, 1969-70

| DRAINAGE BASIN and/or SNOW COURSE | | THIS YEAR | | | PAST RECORD | |
|-----------------------------------|-----------|----------------|---------------------|------------------------|---------------------------------|-----------|
| | | Date of Survey | Snow Depth (Inches) | Water Content (Inches) | Water Content (inches) | |
| NAME | Elevation | | | | Last Year | Average † |
| Agassiz | 11200 | 11/5 | 18 | 4.0 | NO RECORD FOR THIS PERIOD | |
| Agassiz | 11200 | 12/1 | 18 | 7.0 | | |
| Baker Butte | 7300 | 1/2 | 2 | 0.3 | | |
| Baldy | 9125 | 1/2 | 8 | 1.4 | | |
| Canyon Creek | 7500 | 1/2 | 7 | 1.2 | | |
| Chalender | 7100 | 1/3 | T | 0.0 | | |
| Cheese Springs | 8600 | 1/2 | 11 | 1.9 | | |
| Copper Basin Divide | 6720 | 1/3 | 0 | 0.0 | | |
| Coronado Trail | 8000 | 1/2 | 8 | 0.8 | | |
| Fort Valley | 7350 | 1/3 | 0 | 0.0 | | |
| Hannagan Meadows | 9090 | 1/2 | 18 | 3.9 | | |
| Happy Jack | 7630 | 1/2 | 1 | 0.2 | | |
| Inner Basin #1 | 10100 | 11/5 | 7 | 2.8 | | |
| Inner Basin #1 | 10100 | 12/1 | 19 | 6.7 | | |
| Inner Basin #2 | 9750 | 11/5 | 7 | 2.6 | | |
| Inner Basin #2 | 9750 | 12/1 | 12 | 4.7 | | |
| Inner Basin #3 | 10250 | 11/5 | 10 | 3.6 | | |
| Inner Basin #3 | 10250 | 12/1 | 17 | 6.6 | | |
| Maverick Fork | 9050 | 1/2 | 8 | 1.6 | | |
| McNary | 7200 | 1/2 | 5 | 0.9 | | |
| Mormon Mountain | 7500 | 1/2 | 2 | 0.4 | | |
| Newman Park | 6750 | 1/3 | 0 | 0.0 | | |
| Nutriosio | 8500 | 1/2 | 6 | 0.6 | | |
| Wilson Lake | 9000 | 1/2 | 15 | 3.6 | | |

SNOW ABOUT JANUARY 15, 1970

| SNOW ABOUT JANUARY 15, 1970 | | THIS YEAR | | | PAST RECORD | |
|---|-----------|----------------|---------------------|------------------------|------------------------|-----------|
| DRAINAGE BASIN and/or SNOW COURSE | | Date of Survey | Snow Depth (Inches) | Water Content (Inches) | Water Content (inches) | |
| NAME | Elevation | | | | Last Year | Average † |
| GILA RIVER | | | | | | |
| Bear Wallow | 8100 | 1/14 | 2 | 0.7 | 2.8 | 3.1 |
| Beaver Head | 8000 | 1/14 | 6 | 1.3 | 2.2 | 2.2 |
| Coronado Trail | 8000 | 1/14 | 5 | 1.0 | 3.1 | 2.1 |
| Crazy Horse (A) | 10200 | N O | S U R V E Y | --- | --- | --- |
| Emory Pass #1 * | 7800 | 1/14 | 4 | 0.9 | 0.0 | --- |
| Emory Pass #2 * | 7800 | 1/14 | 3 | 0.8 | 1.5 | --- |
| Frisco Divide | 8000 | 1/15 | 5 | 1.5 | 2.0 | 1.8 |
| Hannagan Meadows * | 9090 | 1/14 | 16 | 4.0 | 7.2 | --- |
| High Peak (A) | 10500 | N O | S U R V E Y | --- | --- | --- |
| Hummingbird (A) | 10550 | 1/14 | 36 | 8.6 | 9.5 | --- |
| Ice King | 8020 | 1/14 | 12 | 3.6 | 4.7 | 3.2** |
| McKnight Cabin * | 9300 | 1/14 | 18 | 4.7 | 4.0 | --- |
| Mogollon | 7000 | 1/14 | 4 | 1.3 | 1.8 | 1.2 |
| Nutriosio | 8500 | 1/15 | 2 | 0.3 | 2.8 | 1.5 |
| Redstone Trail | 8600 | 1/14 | 13 | 3.9 | 5.3 | 5.1** |
| Rose Canyon | 7300 | 1/14 | 0 | 0.0 | 0.0 | 2.0 |
| Silver Creek Divide | 9000 | 1/14 | 22 | 6.8 | 8.5 | 7.3** |
| State Line | 8000 | 1/15 | 1 | 0.5 | 2.4 | 1.9 |
| Whitewater (A) | 10750 | 1/14 | 43 | 9.4 | 10.0 | --- |
| SALT RIVER | | | | | | |
| Baldy * | 9125 | 1/14 | 7 | 2.0 | 4.8 | 4.2 |
| Beaver Head | 8000 | 1/14 | 6 | 1.3 | 2.2 | 2.2 |
| Canyon Creek | 7500 | 1/14 | 5 | 1.1 | 2.9 | 1.7** |
| Canyon Point | 7600 | 1/14 | 5 | 1.0 | 3.7 | --- |
| Coronado Trail | 8000 | 1/14 | 5 | 1.0 | 3.1 | 2.1 |
| Forest Dale | 6430 | 1/14 | 2 | 0.4 | 1.6 | 0.7 |
| Ft. Apache | 9160 | 1/14 | 11 | 2.7 | 5.1 | 4.7 |
| Hannagan Meadows | 9090 | 1/14 | 16 | 4.0 | 7.2 | --- |
| Hawley Lake | 8300 | 1/14 | 5 | 1.3 | 6.4 | --- |
| Heber | 7600 | 1/14 | 5 | 1.1 | 3.3 | 1.8 |
| Maverick Fork | 9050 | 1/14 | 6 | 2.0 | 6.2 | 5.3 |
| McNary | 7200 | 1/14 | 1 | 0.4 | 3.7 | 1.1 |
| Milk Ranch | 7000 | 1/14 | T | T | 2.2 | 0.8 |
| Mt. Ord (A) | 11000 | N O | S U R V E Y | --- | --- | --- |
| Nutriosio * | 8500 | 1/15 | 2 | 0.3 | 2.8 | 1.5 |
| Smith Cienega (A) | 9850 | N O | S U R V E Y | --- | --- | --- |
| Wilson Lake | 9000 | 1/14 | 16 | 4.3 | 7.8 | --- |
| Workman Creek | 6900 | 1/12 | 8 | 1.4 | 6.9 | 3.0 |
| BILL WILLIAMS RIVER | | | | | | |
| Camp Wood * | 5700 | 1/13 | 0 | 0.0 | 0.0 | 0.4 |
| Copper Basin Divide | 6720 | 1/14 | 0 | 0.0 | 1.3 | 1.2** |
| Iron Springs | 6200 | 1/14 | 0 | 0.0 | 0.0 | 0.9 |
| † 1953-67, 15-year period. (*) Adjacent drainage. (**) 1953-67 Adjusted Average. (A) Aerial observation: Water content estimated. | | | | | | |
| - 7 - | | | | | | |

SNOW ABOUT JANUARY 15, 1970

| DRAINAGE BASIN and/or SNOW COURSE | | THIS YEAR | | | PAST RECORD | |
|--|-----------|----------------|---------------------|------------------------|------------------------|-----------|
| | | Date of Survey | Snow Depth (Inches) | Water Content (Inches) | Water Content (inches) | |
| NAME | Elevation | | | | Last Year | Average † |
| <u>VERDE RIVER</u> | | | | | | |
| Baker Butte | 7300 | 1/14 | 3 | 0.5 | 4.1 | --- |
| Camp Wood | 5700 | 1/13 | 0 | 0.0 | 0.0 | 0.4 |
| Chalender | 7100 | 1/14 | 0 | 0.0 | 1.1 | 1.5 |
| Copper Basin Divide | 6720 | 1/14 | 0 | 0.0 | 1.3 | 1.2** |
| Fort Valley | 7350 | 1/14 | 0 | 0.0 | 1.5 | 0.9 |
| Gaddes Canyon | 7600 | 1/14 | T | T | 2.7 | 2.1** |
| Happy Jack | 7630 | 1/14 | 0 | 0.0 | 2.9 | 1.4 |
| Iron Springs * | 6200 | 1/14 | 0 | 0.0 | 0.0 | 0.9 |
| Mingus Mountain | 7100 | 1/14 | 0 | 0.0 | 0.0 | 0.6 |
| Mormon Lake * | 7350 | 1/14 | 2 | 0.3 | 3.2 | 1.6 |
| Mormon Mountain | 7500 | 1/14 | 1 | 0.2 | 3.6 | 2.2 |
| Newman Park | 6750 | 1/14 | 0 | 0.0 | 2.6 | 1.2** |
| Snow Bowl #1 | 10260 | 1/14 | 14 | 4.4 | 3.8 | 4.8** |
| Snow Bowl #2 | 11000 | 1/14 | 23 | 5.4 | 5.7 | --- |
| White Horse Lake Jct. | 7150 | 1/14 | 0 | 0.0 | 1.0 | --- |
| White Spar | 6000 | 1/14 | 0 | 0.0 | 0.0 | 0.9** |
| <u>LOWER COLORADO RIVER</u> | | | | | | |
| Bill Williams Int. | 8550 | 1/14 | 5 | 1.3 | 5.0 | --- |
| Bill Williams Summit | 8950 | 1/14 | 10 | 2.5 | 5.4 | --- |
| Bright Angel | 8400 | N O | S U R V E Y | | --- | --- |
| Chalender * | 7100 | 1/14 | 0 | 0.0 | 1.1 | 1.5 |
| Fort Valley | 7350 | 1/14 | 0 | 0.0 | 1.5 | 0.9 |
| Grand Canyon | 7500 | 1/15 | 5 | 1.0 | 1.8 | 1.1 |
| Williams Ski Run | 7720 | 1/14 | 4 | 1.2 | 4.0 | --- |
| <u>LITTLE COLORADO RIVER</u> | | | | | | |
| Agassiz | 11200 | 1/5 | 39 | 10.9 | --- | --- |
| Baldy | 9125 | 1/14 | 7 | 2.0 | 4.8 | 4.2 |
| Canyon Creek | 7500 | 1/14 | 5 | 1.1 | 2.9 | 1.7** |
| Canyon Point | 7600 | 1/14 | 5 | 1.0 | 3.7 | --- |
| Cheese Springs | 8600 | 1/14 | 10 | 2.3 | 4.8 | --- |
| Forest Dale | 6430 | 1/14 | 2 | 0.4 | 1.6 | 0.7 |
| Ft. Apache | 9160 | 1/14 | 11 | 2.7 | 5.1 | 4.7 |
| Fort Valley | 7350 | 1/14 | 0 | 0.0 | 1.5 | 0.9 |
| Happy Jack * | 7630 | 1/14 | 0 | 0.0 | 2.9 | 1.4 |
| Heber | 7600 | 1/14 | 5 | 1.1 | 3.3 | 1.8 |
| Inner Basin #1 | 10100 | 1/5 | 28 | 8.3 | --- | --- |
| Inner Basin #2 | 9750 | 1/5 | 17 | 4.7 | --- | --- |
| Inner Basin #3 | 10250 | 1/5 | 18 | 5.6 | --- | --- |
| McNary | 7200 | 1/14 | 1 | 0.4 | 3.7 | 1.1 |
| Mormon Lake | 7350 | 1/14 | 2 | 0.3 | 3.2 | 1.6 |
| Mormon Mountain | 7500 | 1/14 | 1 | 0.2 | 3.6 | 2.2 |
| Nutriosio | 8500 | 1/15 | 2 | 0.3 | 2.8 | 1.5 |
| Snow Bowl #1 | 10260 | 1/14 | 14 | 4.4 | 3.8 | 4.8** |
| Snow Bowl #2 | 11000 | 1/14 | 23 | 6.4 | 5.7 | --- |
| Wilson Lake * | 9000 | 1/14 | 16 | 4.3 | 7.8 | --- |
| †1953-67, 15-year period. (*) Adjacent drainage. (**) 1953-67 Adjusted Average. (A) Aerial observation: Water content estimated. | | | | | | |



PRECIPITATION AT SELECTED ARIZONA STATIONS 1/

| STATION | Precipitation (Inches) | | | |
|-----------------------|------------------------|--------|---|--------|
| | December - 1969 | | Current Water Year (Oct. 1969 - December 1969) | |
| | Departure from | | Departure from | |
| | Total | Normal | Total | Normal |
| Alpine | 1.17 | - .10 | 4.14 | + .34 |
| Ash Fork | .47 | - .71 | 2.65 | + .05 |
| Clifton | 2.21 | + 1.19 | 4.11 | + 1.65 |
| Douglas Smelter | .75 | + .08 | .88 | - .89 |
| Flagstaff WBO* | .46 | - 1.19 | 3.64 | - .53 |
| McNary | 1.12 | - 1.25 | 4.70 | - .94 |
| Payson Ranger Station | .57 | - 1.33 | 4.45 | - .30 |
| Phoenix WBO* | .68 | - .17 | 1.41 | - .39 |
| Prescott (City) | .28 | - 1.49 | 3.05 | - 1.02 |
| Springerville | .28 | - .21 | 1.33 | - .40 |
| Tucson WBO* | .82 | - .10 | 1.91 | - .27 |
| Winslow WBO* | .40 | - .12 | 1.16 | - .38 |
| Yuma WBO* | .67 | + .35 | 2.34 | + 1.52 |

1/ Data and Analysis furnished by Paul C. Kangieser,
Arizona State Climatologist, U. S. Weather Bureau,
ESSA, Tempe

* WBO = Weather Bureau Office

SOIL MOISTURE ABOUT JANUARY 15, 1970

| DRAINAGE BASIN and/or STATION | | Profile (Inches) | | Date of Survey | Soil Moisture (Inches) | | |
|-------------------------------|-----------|------------------|----------|----------------|------------------------|-------------|-------------|
| Name | Elevation | Depth | Capacity | | This Year | Last Year | Average † |
| <u>GILA RIVER</u> | | | | | | | |
| Frisco Divide | 8000 | 48 | 13.3 | 10/15 1/15 | 7.5 8.6 | --- 6.6 | --- 9.7 |
| <u>SALT RIVER</u> | | | | | | | |
| Black River Divide | 9100 | 48 | 16.8 | 10/15 1/14 | 17.5 17.6 | --- 14.4 | --- 14.6 |
| Canyon Creek | 7500 | 48 | 18.3 | 10/13 1/14 | 13.2 16.6 | --- 14.2 | --- 15.0 |
| Corduroy Creek | 6000 | 48 | 16.0 | 10/13 1/14 | 6.2 9.5 | --- 6.0 | --- 7.9 |
| McNary | 7200 | 48 | 16.3 | 10/13 1/14 | 13.2 13.7 | --- 14.0 | --- 14.8 |
| <u>VERDE RIVER</u> | | | | | | | |
| Mormon Mountain | 7500 | 48 | 16.1 | 10/31 1/14 | 13.2 13.5 | --- 13.4 | --- 15.0 |
| Newman Park | 6750 | 48 | 17.7 | 11/6 1/14 | 11.1 11.9 | --- 12.6 | --- 14.6 |

- 10 -

PRECIPITATION (Inches) ABOUT JANUARY 15, 1970

| DRAINAGE BASIN and PRECIPITATION GAGE LOCATION | ELEVATION | CURRENT INFORMATION | | | FROM APPROX. NOV. 1 TO DATE | | |
|---|-----------|---------------------|--------------------------|-----------|-----------------------------|-----------|-----------------------|
| | | Date of Reading | Month's Precipitation | Average † | This Year | Average † | Percent of Average |
| <u>GILA RIVER</u> | | | | | | | |
| Silver Creek Divide | 9000 | 1/14 | --- | --- | 6.10 | --- | --- |
| Hannagan Meadows | 9030 | 1/31 | --- | 1.33* | 4.56 | 6.56* | 70 |
| <u>SALT RIVER</u> | | | | | | | |
| Canyon Point | 7600 | 1/14 | .14 | --- | 5.64 | --- | --- |
| Hannagan Meadows | 9030 | 1/31 | --- | 1.33* | 4.56 | 6.56* | 70 |
| Little Wildcat (Heber Snow Course) | 7600 | 1/14 | .16 | 1.77* | 5.35 | 7.30* | 73 |
| Maverick Fork | 9050 | 1/14 | .08 | 1.29* | 3.91 | 6.39* | 61 |
| Workman Creek ** | 6970 | 1/12 | .10 | 2.15 | 7.48 | 8.90 | 84 |
| Wilson Lake | 9100 | 1/14 | .22 | --- | 3.48 | --- | --- |
| <u>VERDE RIVER</u> | | | | | | | |
| Baker Butte | 7300 | 1/14 | .30 | --- | 5.06 | --- | --- |
| Copper Basin Divide | 6720 | 1/14 | .10 | --- | 2.87 | --- | --- |
| Fort Valley ** | 7350 | 1/14 | .14 | .97 | 2.24 | 4.62 | 48 |
| Happy Jack ** | 7480 | 1/14 | .04 | 1.30* | 3.32 | 5.42* | 61 |
| Mingus Mountain | 7660 | 1/14 | .09 | 1.00 | 2.67 | 4.72 | 57 |
| Mormon Mountain | 7500 | 1/14 | .27 | --- | 3.79 | --- | --- |
| <u>LITTLE COLORADO</u> | | | | | | | |
| Inner Basin #1 | 9830 | 1/5 | --- | --- | 4.55 | --- | --- |
| Inner Basin #2 | 10050 | 1/5 | --- | --- | 4.45 | --- | --- |
| Sheep Crossing (Baldy Snow Course) | 9125 | 1/14 | .16 | 1.46* | 3.04 | 5.96* | 51 |
| Little Wildcat (Heber Snow Course) | 7600 | 1/14 | .16 | 1.77* | 5.35 | 7.30* | 73 |
| * 1953-67 Adjusted Average | | | | | | | |
| ** Data Supplied by U. S. Forest Ser- vice. | | | | | | | |
| -12- | | | | | | | |



SNOW COURSESNOW SURVEYOR

Baker Butte
Baldy
Bear Wallow
Beaver Head
Bill Williams Intermediate
Bill Williams Summit
Bright Angel
Camp Wood
Canyon Creek
Canyon Point
Chalender
Cheese Springs
Copper Basin Divide
Coronado Trail
Crazy Horse
Emory Pass
Forest Dale
Ft. Apache
Fort Valley
Frisco Divide
Gaddes Canyon
Grand Canyon
Hannagan Meadows
Happy Jack
Hawley Lake
Heber
High Peak
Hummingbird
Ice King
Inner Basin #1, #2, #3
Iron Springs
Maverick Fork
McKnight Cabin
McNary
Milk Ranch
Mingus Mountain
Mogollon
Mormon Lake
Mormon Mountain
Mt. Ord
Munds Park
Newman Park
Nutrioso
Redstone Trail
Rose Canyon
Silver Creek Divide
Smith Cienega
Snow Bowl #1 and #2
State Line
White Horse Lake Junction
White Spar
Whitewater
Williams Ski Run
Wilson Lake
Workman Creek

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SCS - Bill Cole
Forest Service - Carl Sollers
N. A. Josh
Forest Service - John Sotelo
Forest Service - John Sotelo
National Park Service - Kenneth Hulick, Dist. Rgr.
Forest Service - Walter G. Richardson
SCS - Dick Enz
SCS - Dick Enz
Forest Service - M. Freshour
SCS - Bill Cole
SCS - Bill Gray
Forest Service - John W. Holt
Forest Service - Loyd Barnett
SCS - Jim Powell and Travis Stevenson
Bureau of Indian Affairs - Raymond Endfield
SCS - Bill Cole
Rocky Mountain Forest & Range Exp. Station
Forest Service - J. M. Sanchez
Paul G. Lidbeck
National Park Service - Robert E. Scott, Dist. Rgr.
N. A. Josh
Forest Service - Don W. Witt
Bureau of Indian Affairs - Raymond Endfield
SCS - Dick Enz
Forest Service - Loyd Barnett
Ray Freeman
James R. Wray
SCS and USBR - Jack Jorgensen and Sid Saunders
SCS - Bill Gray
SCS - Bill Cole
Ray Freeman
Bureau of Indian Affairs - Raymond Endfield
Bureau of Indian Affairs - Raymond Endfield
Paul G. Lidbeck
James R. Wray
SCS - Jack Jorgensen
SCS - Jack Jorgensen
Salt River Project - Bill Warskow
SCS - Jack Jorgensen
SCS - Jack Jorgensen
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Forest Service - J. M. Sanchez
Forest Service - John Sotelo
SCS - Bill Gray
Ray Freeman
Forest Service - John Sotelo
SCS - Bill Cole
Rocky Mountain Forest & Range Exp. Station

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The Following Organizations Cooperate in the Arizona Snow Survey Work

FEDERAL

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Soil Conservation Service

Forest Service

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Cacanina Forest

Coranada Forest

Gila Forest

Kaibab Forest

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Bureau of Indian Affairs

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San Carlos Irrigation Project

National Park Service

Grand Canyon National Park

Gila Water Commissioner

Saffard, Arizona

STATE

University of Arizona

Arizona Agricultural Experiment Station

Water Resource Research Center

IRRIGATION PROJECTS

Salt River Valley Water Users' Association

Phoenix, Arizona

San Carlos Irrigation and Drainage District

Coolidge, Arizona

PRIVATE

Southwest Forest Industries, Inc.

McNary, Arizona

Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

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